CHAPTER 3

Installation

This chapter describes the installation procedure for the Cisco 8110 Broadband Termination Unit. It contains the following topics:

- Unpacking the System, page 3-1
- Basic Hardware Features, page 3-2
- Removable Power Supply, page 3-7
- General Operating Procedures, page 3-10

Unpacking the System

Upon receipt of, and before opening the Cisco 8110 unit, inspect the package for any damage that might have occurred during shipping. If the package shows any signs of external damage or rough handling, notify your carrier's representative.

When unpacking the Cisco 8110 be sure to keep all original packing materials. They might be needed for storing, transporting, or returning the product

Note All products returned to Cisco , under warranty, must be packed in their original packing materials.

A complete inventory should be carried out before any power is applied to the unit. The Cisco 8110 package should include the following:

- Cisco 8110 unit
- Rack-mount brackets
- Serial cable
- A CDROM containing:
  - Release Notes
  - Cisco 8110 Installation Manual
  - Cisco 8110 User’s Manual

Basic Hardware Features

The unit can be fitted into a standard 19” rack or as a desktop and is 2.6” (1.5U high). For rack mounting, the unit is simply screwed to the sides of the rack with 2 x 2 bolts.

A standard configuration will include two LIMs. To insert or extract a module into its slot, grip the two mounting screws on the front panel and push to insert, or pull to extract. A network-side LIM should be installed in the middle slot. The user-side LIM should be installed in the left side slot. The third module, a hot standby module is placed in the far-right slot.

Power Supply and Fuses

The unit can be powered with 110/220VAC. A -48VDC option is also available.

The system is protected the following:

- For 220V products, the system is protected with a 1.25A slow-blow fuse (F1).
- For 110V products, the system is protected with a 2.5A slow-blow fuse (F1).
- The optional -48V power supply is protected with a 3.15A slow-blow fuse.
- Fuses are located in fuse holder (FH1).

Cable Connections

Caution All modules are susceptible to electrostatic discharge (ESD) even while installed. Take the necessary precautions to minimize electrostatic damage while handling modules.

Connecting Optical Cables

Warning **When LIM-155SM-I ,LIM-155SM-L, LIM-155SM-XL, , LIM-155SM-I-SH, LIM-155SM-L-SH or LIM-155SM-XL-SH are used the CISCO 8110 is a Class 1 Laser Product**

Take the necessary precautions to avoid dangerous radiation hazards if these modules are not handled properly.

To connect your Cisco 8110 unit optical interfaces:

Step 1 Prepare a pair of appropriate (multimode or singlemode) optical cables with appropriate (SC or ST) connectors on the Cisco 8110 side.

- It is advisable to mark the ends of the cable so that you can identify the wires.
- Remove the optical connector protective cover.

Step 2 Snap the cables into the LIM ports on the front panel of your Cisco 8110 unit.

Step 3 Snap the other end of the cable into the ATM switch or other ATM equipment. Be sure that each cable connects to Tx on one end and Rx on the other.

Connecting Electrical Signal Cables

To connect your Cisco 8110 unit electrical interfaces:

Step 1 Prepare a pair of appropriate cables with connectors on the Cisco 8110 side
It is advisable to mark the ends of the cable so that you can identify the wires.

Step 2 Attach the cables into the LIM ports on the front panel of your Cisco 8110 unit.

Step 3 Attach the other end of the cable into the ATM switch or other ATM equipment. Ensure that each cable connects to Tx on one end and Rx on the other.

Connecting the Terminal

Basic configuration of your Cisco 8110 unit can be performed in one of two ways: either by using a standard ASCII terminal, or using the in-band management software application.

To connect an ASCII terminal to the Cisco 8110 terminal port:

Step 1 Configure the terminal: 9600 baud, 8 data bits, 1 stop bit, no parity, xon/xoff flow control.

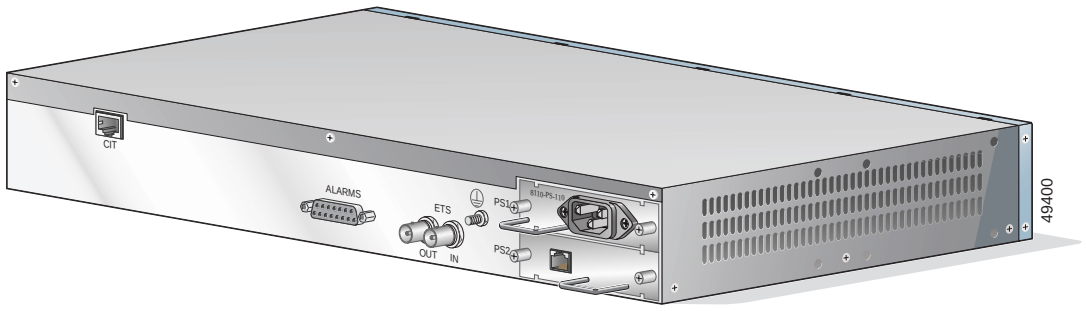
Step 2 Plug the included console cable into the terminal port located at the back of the Cisco 8110 unit (CIT). (See Figure 3-1).

Step 3 Connect the other end of the cable to the terminal.

Note Refer to Configuration in Chapter 4 for information on using the console management software for basic configuration.

To connect the terminal using the in-band management software application, see the“Installing a Line Interface / Compact Subscriber Module (LIM)” section on page 3-4.

Figure 3-1 Rear Panel



CIT Pinout

Table 3-1 shows the serial port pinout configuration.

Table 3-1 Console Serial Port Pinout

Pin Number	Signal Mnemonic	Signal Name
1	DSR	Data Set Ready
2	RXD	Receive Data
3	TXD	Transmit Data
4	DTR	Data Terminal Ready
5	GND	Signal Ground
6	DCD	Data Carrier Detect
7	CTS	Clear to Send
8	RTS	Request to Send

LIM Modules

Caution The T1/E1 and T3/E3 connections are restricted to intra-building use only. Do not connect to exposed plant. The equipment is intended to be used behind a CSU/DSU. The CSU/DSU should be provided with adequate lightning protection.

Installing a Line Interface / Compact Subscriber Module (LIM)

To install a LIM in your Cisco 8110:

Step 1 Make sure that the LIM module state is **OOS** (Out Of Service) using the console, or the in-band management application.

Step 2 Place the module's card edges into the right and left module guides at the front of the Cisco 8110

Step 3 Slide in the module until it makes contact with the backplane, then push firmly to mate the connectors solidly with the backplane.

Step 4 When the module is seated solidly against the backplane, secure the module's front panel to the Cisco 8110 chassis using the mounting screws on the right and left of the module's front panel.

Step 5 Securely install and fasten each module to facilitate the installation of the one next to it.

Step 6 Configure the module *type* to the actual LIM type, using the console or the in-band management application.

Step 7 Change the module *state* to **Active**, using the console or the in-band management application.

Removing a Line Interface / Compact Subscriber Module (LIM)

To remove a LIM in your Cisco 8110:

Step 1 Change the module *state* to **OOS** (Out of Service) using the console, or the in-band management application

Step 2 Unscrew the right and left mounting screws on the front panel of the module.

Step 3 Remove the module by pulling evenly its mounting screws.

Step 4 Use faceplate panels to protect unused slots from dust and reduce electromagnetic radiation.

Caution If you store modules outside the Cisco 8110 for an extended length of time, place them in the original packaging (or equivalent packaging providing ESD protection).

Replacing Modules

Caution All modules are susceptible to electrostatic discharge (ESD) even while installed. Take the necessary precautions to minimize electrostatic damage while handling modules.

When changing from one type of LIM to another (e.g. from STM-1 to E3) use the following procedure:

Step 1 Change the module *state* to **OOS** (Out of Service) by using the console or the in-band management application.

Step 2 Remove the module

Step 3 Insert the new LIM

Step 4 Change the LIM module *type* by using the console or the in-band management application.

Step 5 Change the module *state* to **Active** by using the console or the in-band management application

Step 6 Reboot the Cisco 8110.

Connecting the External Timing

Timing for the Cisco 8110 can be provided by an external 2048 Kbps signal. The Cisco 8110 outputs the timing signal, after it has been reconditioned, through its timing output. The timing signal from the Cisco 8110 can be used to synchronize other equipment, including other Cisco 8110 devices.

To connect your Cisco 8110 external timing signals:

Step 1 Prepare a pair of appropriate coaxial cables with appropriate connectors on the Cisco 8110 side.

Step 2 You may want to mark the ends of the cable so you can identify the wires.

Step 3 Attach one cable into the ETS IN port on the rear panel of your Cisco 8110 unit.

Step 4 Attach the other end of the cable connected to the IN connector, to the timing source.

Step 5 If required, attach the other cable into the ETS OUT port on rear panel of the Cisco 8110 unit.

Step 6 Attach the other end of the cable connected to the OUT connector, to the input of the next equipment requiring external timing.

Step 7 Set timing source to **External** timing.

Connecting the External alarms

The Cisco 8110 provides one external dry relay alarm indication, and four external alarm input indications.

To connect your Cisco 8110 external alarm signals:

Step 1 Prepare a shielded cable with connector plug DB15 with shielded backshell.

Step 2 Attach the D-type connector to the ALARMS port on the rear panel of your Cisco 8110 unit. To secure, tighten the screws on both sides of the connector.

Step 3 Attach the other end of the cable connected to the alarm collection panel.

Step 4 Set the Alarm *state* to **Active**.

Note Refer to ”External Alarm Configuration” (Chapter 10) for information on using the console management software for basic external alarms configuration.

Alarms Pinout

Table 3-2 shows alarm pinout configuration

Table 3-2 Alarm port pinout

Pin Number	Signal Name
1	Alarm a input
2	Alarm b input
3	Alarm c input
4	-
5	Gnd
6	-
7	Alarm Output NO
8	Alarm Output Center
9	Alarm d input
10	Gnd
11	Gnd
12	-
13	-
14	-
15	Alarm Output NC

Removable Power Supply

This section contains the following topics:

- Unpacking the Power Supply
- Basic Hardware Features
- Cable Connections
- Power Supply Installation
- Power Supply LEDs

Unpacking the Power Supply

Upon receipt of, and before opening the power supply, inspect the package for any damage that might have occurred during shipping. If the package shows any signs of external damage or rough handling, notify your carrier's representative.

Note When unpacking the power supply be sure to keep all original packing materials. They might be needed for storing, transporting, or returning the product.

All products returned to Cisco, under warranty, must be packed in their original packing materials.

A complete inventory should be carried out before the power supply is installed. The power supply package should include the following:

- Power supply unit
- Power Supply Installation Manual

Caution All modules are susceptible to electrostatic discharge (ESD) even while installed. Take the necessary precautions to minimize electrostatic damage while handling modules.

Basic Hardware Features

The power supply is designed to be installed into the Cisco 8110 power supply slot that are located at the rear of the equipment, and provides the powering for the unit.

A basic configuration will include one power supply. A second power supply may be installed for redundancy. Each of these modules has one handle for insertion or extraction from the unit and fastening screws at the sides.

The power supply options are:

Type	Description
8110-PS-110	110 VAC Power Supply
8110-PS-DC	-48 VDC Power Supply
8110-PS-220	220 VAC Power Supply

Caution Connecting 220V to 110V power supplies can cause unrecoverable damage.

Cable Connections

This section contains the following:

- Connecting 8110-PS-220 or 8110-PS-110, page 3-8
- Connecting 8110-PS-DC, page 3-9

Connecting 8110-PS-220 or 8110-PS-110

To connect your 8110-PS-220 or 8110-PS-110 AC Power Supply:

Step 1 Prepare a standard mains cable with IEC 230 connector

Step 2 Snap the cable into the 8110-PS-220 IEC 230 Inlet.

Connecting 8110-PS-DC

To connect your 8110-PS-DC DC Power Supply:

Step 1 Connect a minimum 14AWG ground wire to the stud located on the rear of the chassis. Fasten with a lockwasher and screw.

Step 2 Remove the Dinkel connector from the unit

Step 3 Prepare a pair of 14 to 18 (16 recommended) AWG, cables

Step 4 Attach the -48VDC and the RTN connections to the Dinkel connector, and fasten them using the connector screws. The polarity is detected automatically by the 8110-PS-DC.

Step 5 Snap the connector into the 8110-PS-DC Dinkel receptacle.

Power Supply Installation

This section contains the following:

- Table 3-2 Installing a Power Supply, page 3-9
- Removing a Power Supply, page 3-10

Installing a Power Supply

To install a power supply in your Cisco 8110:

Step 1 Verify that the module state is Out of Service (OOS), using the console or the in-band management application.

Step 2 If you are installing a 8110-PS-220 verify that the input voltage selector strap, located in the right side of the module, is in the right position

Step 3 Remove the Faceplate panel that covers the PS slot, if exists.

Step 4 Place the module's card edges into the right and left module guides at the rear of the Cisco 8110

Step 5 Slide in the module until it makes contact with the backplane, then push firmly to mate the connectors solidly with the backplane.

Step 6 Secure the module's front panel to the Cisco 8110 chassis using the mounting screws on the right and left of the module's front panel.

Step 7 Securely install and fasten each module to facilitate the installation of the one next to it.

Step 8 Snap the power cable

Step 9 Change the module state to active, using the console or the in-band management application.

Removing a Power Supply

To remove a power supply from your Cisco 8110:

Step 1 Change the module state to Out Of Service (OOS) using the console, or the in band management application

Step 2 2. Remove the power cable

Step 3 3. Unscrew the right and left mounting screws on the front panel of the module.

Step 4 4. Remove the module by pulling its handle.

Step 5 5. Use faceplate panels to protect unused slots from dust and reduce electromagnetic radiation.

Caution The Cisco 8110 ventilation mechanism is not effective if empty slots are not covered with faceplate panels.

Caution Power cable should always be removed from module before unit is removed from Cisco 8110.

Caution If you store modules outside the Cisco 8110 for an extended period of time, place them in the original packaging (or equivalent packaging providing ESD protection).

Power Supply LEDs

Table 3-3 shows the LEDs for the power supply.

Table 3-3 Cisco 8110 Front Panel PS LEDs

LED Indicator	Status	Explanation
PS1	Off	PS in slot 1 Out Of Service
	On	PS in slot 1 Active.
	Blink	PS in slot 1 failed.
PS2	Off	PS in slot 2 Out Of Service
	On	PS in slot 2 Active.
	Blink	PS in slot 2 failed.

General Operating Procedures

The operation of the Cisco 8110 can be controlled and monitored by the system management application and by the panel indicators.

The menu-generated application represents a centralized access point to all the functions that can be performed by means of the Cisco 8110 System application software.

The various panels are equipped with LED indicators (shown in Table 3-4 and Table 3-5) which are continuously updated in accordance with information received in response to periodic polling of the traps and alarms received by the Cisco 8110 System.

Table 3-4 Main Front Panel Section LEDsModel Cisco 8110RFE

LED Indicator	Status	Explanation
Power	On	Unit is powered up
PS1	On Off Blink	Power Supply #1 is active Power Supply #1 is intentionally out of service Power Supply #1 is malfunctioning
PS2	On Off Blink	Power Supply #2 is active Power Supply #2 is intentionally out of service Power Supply #2 is malfunctioning
Run	On	Lights 20 seconds after power up, indicating that software has been loaded and unit is operational
Tx	ON	Ethernet data transmit
Rx	ON	Data received
COL	Blinks	Collision detected
LED #1	ON OFF	Port #1 link up Port #1 link down
LED #2	ON OFF	Port #2 link up Port #2 link down

Table 3-5 LIM Front Panel LEDs for all models

LED Indicator	Status	Explanation
ALM	On Off	Alarm present in LIM. No alarm in LIM.
Tx	Off On Weak On Strong	No cells transmitted in LIM port. LIM transmitter enabled, no ATM cells transmitted User cells are being transmitted.
Rx	Off On Weak On strong Flashing	No cells detected in LIM port. LIM synchronized to receivd signal. No ATM cells detected ATM cells detected. Error during Self Test

Note OUT of SERVICE - all LEDs are off
ACTIVE MODE - Tx and Rx active (for no alarm)
ACTIVE MODE - Tx +ALM active (with alarm)
STANDBY MODE - All LEDs off (including ALM)